i-TEMP

Innovative, Intelligent, Industrial

Next Generation Temperature Control Units
Water and Oil

Heating capacity 9kW - 72kW

Cooling capacity 4kW - 600kW

ics cool energy

Introduction

ICS Cool Energy: Specialising in Temperature Control to Keep your Processes Running

ICS Cool Energy is an established temperature control solutions provider and has been working with the industrial and HVAC sectors for the past 25 years. Providing manufacturing, sales, hire and service, ICS Cool Energy can assist in maintaining the overall production of a business's day-to-day operations through its extensive knowledge and experience in the temperature control industry.

TCUs (temperature control units) make up a large part of ICS Cool Energy's product portfolio offering powerful temperature regulation, direct cooling and modular design thanks to their reliable range of water and oil heaters. Offering temperatures of up to **350°C** with capacities ranging from **9kW** to **72kW** and complete tailor-made solutions, their collection of TCUs cater for a wide variety of process applications.

All ICS Cool Energy's temperature control units are manufactured to **ISO 9001** and **ISO 14001** accreditations providing customers with a high level of performance and quality. Furthermore, ICS Cool Energy is one of the few companies in the UK to provide a fully fitted test rig which offers customers complete reassurance that their product meets all performance ratings.

Based in Southampton, UK ICS Cool Energy's facility provides standard units which are in stock, ready and available for delivery offering additional servicing, local support and spare parts.

Contents

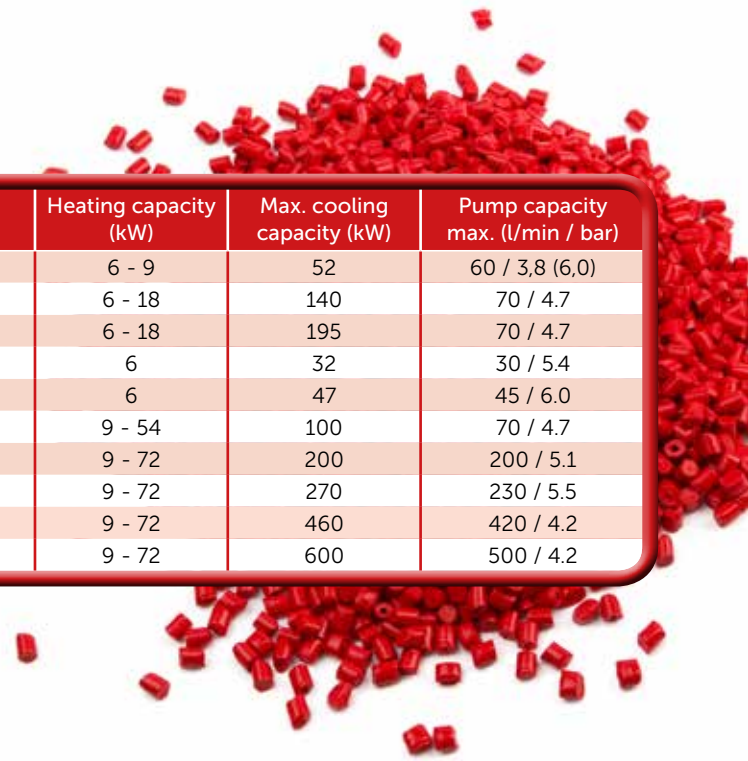
PRODUCT OVERVIEW

ICS Cool Energy temperature control units for water, using indirect cooling

Values in () optional

Type	Medium	Temperature range (°C)	Cooling	Heating capacity (kW)	Max. cooling capacity (kW)	Pump capacity max. (l/min / bar)
i-Temp ci 90e	water	95	indirect	9	23 - 42	60 / 3.8 (6.0)
i-Temp ci 90t 9	water	95	indirect	9	23 - 42	60 / 3.8 (6.0)
i-Temp ci 90t 18	water	95	indirect	18	50	75 / 5.5
i-Temp ci 90t 27	water	95	indirect	27	250	150 / 5.0
i-Temp ci 90t 36	water	95	indirect	36	250	150 / 5.0
i-Temp ci 140e	water	140	indirect	9	40	60 / 5.5
i-Temp ci 140t 9	water	140	indirect	9	40	60 / 5.5
i-Temp ci 140t 18	water	140	indirect	12 / 18	40	60 / 5.5
i-Temp ci 160e	water	160	indirect	9	40	60 / 5.5
i-Temp ci 160t	water	160	indirect	9	40	60 / 5.5
i-Temp wi 100	water	140/150	indirect	9 - 54	100	70 / 4.7
i-Temp wi 150	water	95/140/150/160	indirect	9 - 72	200	200 / 5.1
i-Temp wi 250	water	95/140/150/160	indirect	9 - 72	270	230 / 5.5
i-Temp wi 400	water	95/140/150	indirect	9 - 72	460	420 / 3.6
i-Temp wi 500	water	95/140/150	indirect	9 - 72	600	500 /4.2
i-Temp wh 60	water	200	indirect	9 - 27	32 - 64	60 / 5.0
i-Temp wh 90	water	200	indirect	9 - 36	40 - 80	80 / 5.0
i-Temp wh 120	water	200	indirect	18 - 54	48 - 96	120 / 5.0

ICS Cool Energy temperature control units for water, with direct cooling



Type	Medium	Temperature range (°C)	Cooling	Heating capacity (kW)	Max. cooling capacity (kW)	Pump capacity max. (l/min / bar)
i-Temp cd 90e	water	95	direct	6 - 9	52	60 / 3,8 (6,0)
i-Temp cd 90t	water	95	direct	6 - 18	140	70 / 4.7
i-Temp cd 120t	water	120	direct	6 - 18	195	70 / 4.7
i-Temp cd 140e	water	140	direct	6	32	30 / 5.4
i-Temp wd 60	water	140	direct	6	47	45 / 6.0
i-Temp wd 100	water	140/150	direct	9 - 54	100	70 / 4.7
i-Temp wd 150	water	140/150	direct	9 - 72	200	200 / 5.1
i-Temp wd 250	water	140/150	direct	9 - 72	270	230 / 5.5
i-Temp wd 400	water	140/150	direct	9 - 72	460	420 / 4.2
i-Temp wd 500	water	140/150	direct	9 - 72	600	500 / 4.2

ICS Cool Energy temperature control units for heat transfer oil

Values in () optional

Type	Medium	Temperature range (°C)	Cooling	Heating capacity (kW)	Max. cooling capacity (kW)	Pump capacity max. (l/min / bar)
i-Temp to 50	oil	180	indirect	8	40	90 / 6.2
i-Temp tt 50	oil	300	indirect	4 - 8	15 - 30	60 / 6.0
i-Temp tt 60	oil	300	indirect	9 - 18	82 - 200	60 / 6.0
i-Temp tt 100	oil	300	indirect	9 - 36	82 - 275	100 / 8.0
i-Temp tt 140	oil	300	indirect	12 - 54	82 - 450	160 (200) / 7.0 (5.6)
i-Temp th 60	oil	350	indirect	3 - 6	82 - 110	60 / 6.0
i-Temp th 100	oil	350	indirect	6 - 12	82 - 200	100 / 8.0
i-Temp th 140	oil	350	indirect	9 - 27	82 - 200	160 / 7.0

EXPERIENCE COUNTS

The Food Industry

Requirement:

- To provide precise temperature control equipment to a large project-led engineering company specialising in the manufacture of mixers, pressure vessels, jacketed vessels, blenders, dispensers and clean room equipment.

Solution:

- A custom-built 5kW temperature control units to provide accurate temperature control working through a closed circuit that maintains the temperature of the jacketed vessel's contents within a very tight tolerance.

The Rubber Industry

Requirement:

- To provide a packaged, multi-zone temperature control solution for the manufacturer of tyres overseas.

Solution:

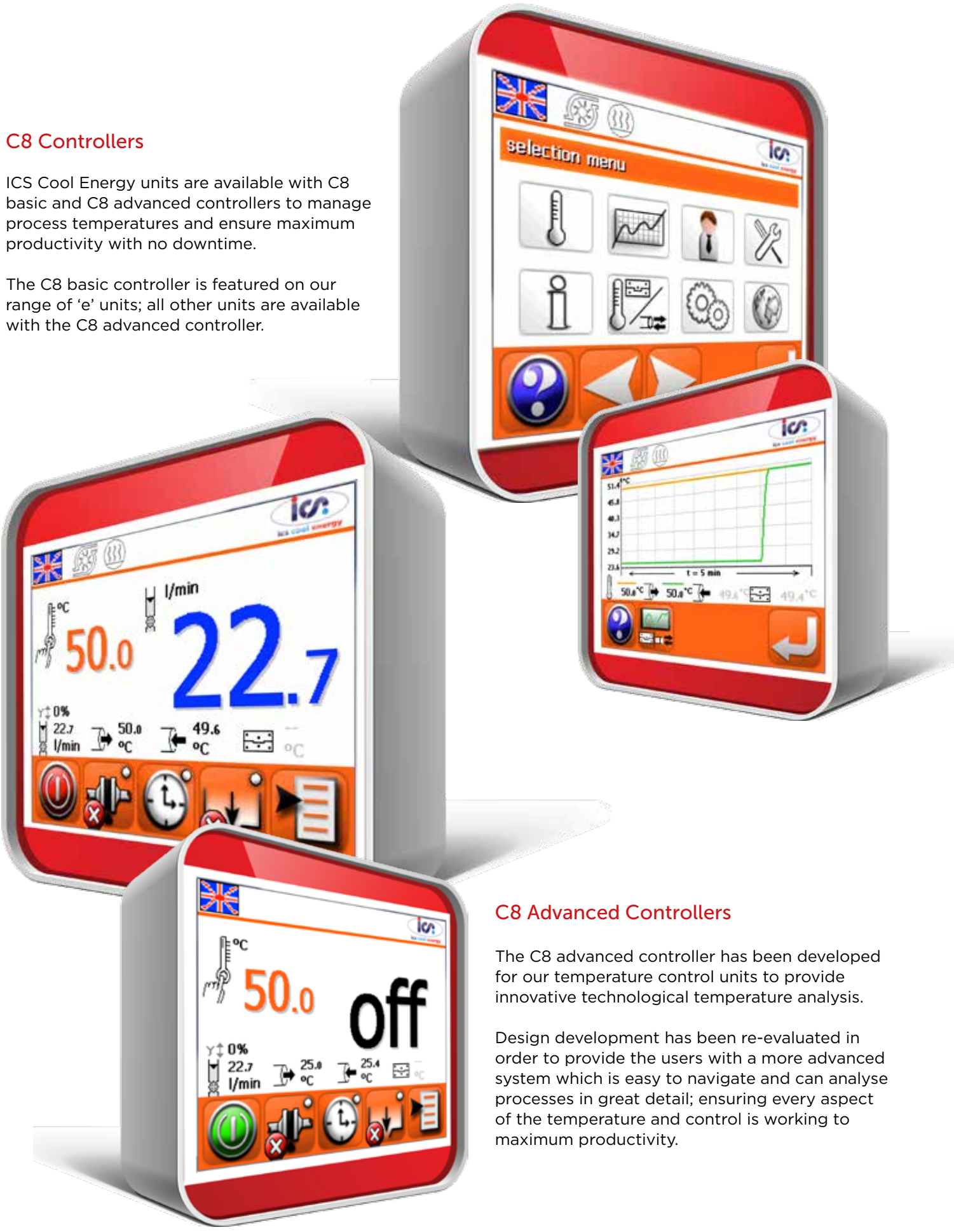
- Twelve compact, bespoke built temperature control units were built with multi-zone capabilities offering 9kW to 96kW capacities.
- They provided a more cost effective and practical solution whilst interfacing with the customer's main control panel using Profibus.
- Featuring non-ferrous internal parts and self-cleaning solenoid valves, maintenance and cleaning needs were reduced.

TAKING CONTROL

C8 Controllers

ICS Cool Energy units are available with C8 basic and C8 advanced controllers to manage process temperatures and ensure maximum productivity with no downtime.

The C8 basic controller is featured on our range of ‘e’ units; all other units are available with the C8 advanced controller.



C8 Advanced Controllers

The C8 advanced controller has been developed for our temperature control units to provide innovative technological temperature analysis.

Design development has been re-evaluated in order to provide the users with a more advanced system which is easy to navigate and can analyse processes in great detail; ensuring every aspect of the temperature and control is working to maximum productivity.

CONTROL FEATURES

● = Standard / o = Option / – = not available/ Values in () optional

FEATURES	C8 BASIC	C8 ADVANCED
Full colour touch screen display	–	●
Selectable languages	–	●
Multiple units can be operated only via one display	–	●
Logbook for alarms	–	●
Ramp programme	–	●
Remote probe (FE-CuNi or PT100)	o	o
Flow monitoring	–	● [1]
Trending	–	●
7 Day timer	o	●
Return temperature indication	–	● [1]
Integrated operating and service information	–	●
Service due alarm	–	●
Security codes	●	●
Temperature limit values	●	●
Ethernet interface	–	●
Optional interfaces analog 0-10 V, 0/4-20mA, serial RS232, RS 422, RS 485, TTY, Can Bus, Profibus, Profinet, Varan Bus and Euromap 66	● [2]	● [2]

1) standard on t models, optional on wi, wd, wh, to, tt & th
2) Various interfaces for injection moulding machines available such as Arburg, Engel, and Krauss Maffei.

TEMPERATURE CONTROLLERS WITH DIRECT AND INDIRECT COOLING

i-Temp ci and cd models

ICS Cool Energy temperature control units, models i-Temp ci and cd are heating and cooling units built for performance. Using the latest technology they are built with maximum energy savings in mind.

i-Temp ci models are water units with indirect cooling, for usage with open tank up to **95°C** and as a closed system up to **160°C**.

i-Temp cd models are designed as water units with direct cooling, for usage up to **140°C**.

There are two variants, one as a low cost entry model (version e) and one as an advanced unit with touchscreen, (version t).

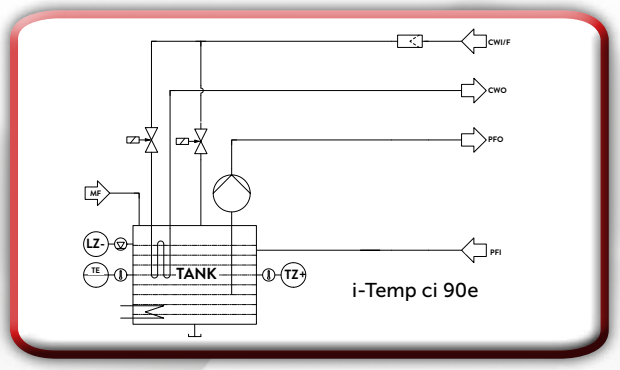
Unit features include:

- **Self optimising C8 advanced controller with high control accuracy (version t)**
- **Touch screen for log in, control and monitoring of process parameters (version t)**
- **Measuring, indication and monitoring of flow rate (version t)**
- **Return temperature indication (version t)**

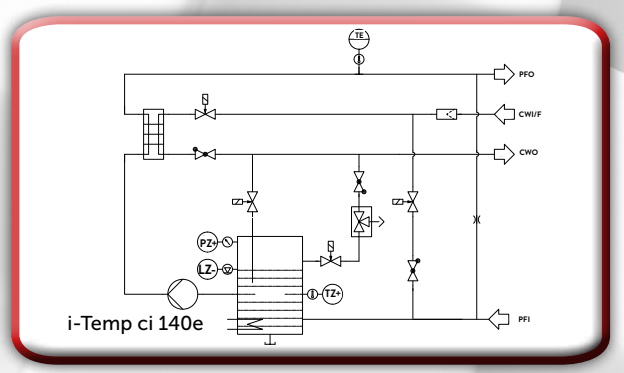
Temperature controllers water indirect 95°C, 120°C, 140°C and 160°C

	Model i-Temp	i-Temp ci 90e	i-Temp ci 140e	i-Temp ci 160e	i-Temp ci 90t 9	i-Temp ci 90t 18
Technical Data	Fluid	water	water	water	water	water
	Temperature max. (°C)	95	140	160	95	95
	Pump capacity max. (l/min/bar)	60/3.8 (6.0)	60/5.5	60/5.5	60/3.8 (6.0)	75/5.5
	Heating capacity (kW)	9	9	9	9	18
	Cooling	indirect	indirect	indirect	indirect	indirect
	Cooling capacity (kW)[1]	23 (42)	40	40	23 (42)	50
	Weight (kg)	44	50	50	46	95
	Process circuit supply and return connections	G½"	G½"	G½"	G½"	G¾"
	Cooling water supply and return connections	G¼"	G¼"	G¼"	G¼"	G½"
	Dimensions in mm (L x W x H)	680 x 250 x 595	680 x 250 x 595	680 x 250 x 595	680 x 250 x 595	955 x 400 x 740
Standard specifications/options	Touchscreen with colour display	–	–	–	●	●
	Digital display	●	●	●	–	–
	Robust fully galvanised steel housing, painted in two colours	●	●	●	●	●
	Automatic fill	●	●	●	●	●
	Strainer in cooling water inlet	●	●	●	●	●
	Durable rubber coated castors	●	●	●	●	●
	All contact parts made of non-corrosive materials	●	●	●	●	●
	Continuous heater control	●	●	●	●	●
	Audible alarm	●	●	●	●	●
	Separate fill line	●	–	–	●	●
	Leak stopper	●	●[2]	●[2]	●	●
	Mould draining	●	O[3]	O[3]	●	●
	Constant cooling	–	–	–	–	–
	Magnetic coupled stainless steel pump	–	O	●	–	–
	Integrated top up-pump	–	–	●	–	–
	Measuring, indication and monitoring of flow rate	–	–	–	●	●
	Return temperature indication	–	–	–	●	●

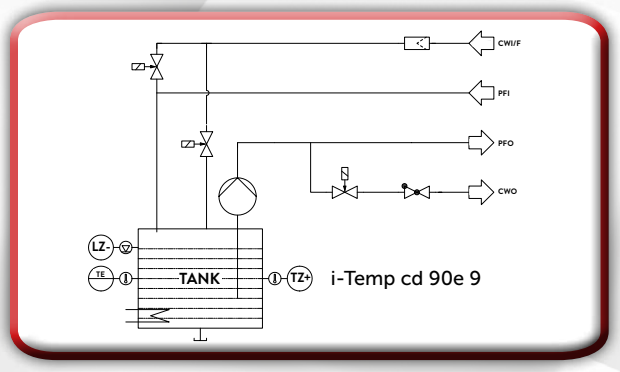
1) at 15°C cooling water temperature and 90°C resp, 130°C circuit water temperature
2) not in combination with mould drain function
3) not in combination with leak stopper



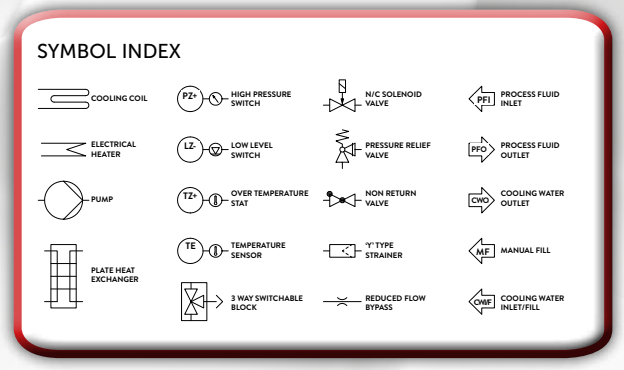
i-Temp ci 90e



i-Temp ci 140e



i-Temp cd 90e 9



● = Standard / o = Option / – = not available/ Values in () optional

i-Temp ci 90t 27	i-Temp ci 90t 36	i-Temp ci 140t	i-Temp ci 140t 18	i-Temp ci 160t	i-Temp cd 90e	i-Temp cd 140e	i-Temp cd 90t	i-Temp cd 120t
water	water	water	water	water	water	water	water	water
95	95	140	140	140	95	140	95	120
170/4.7	170/4.7	60/5.5	60/5.5	60/5.5	60/3.8 (6.0)	30/5.4	70/4.7	70/4.7
27	36	9	12/18	9	6-9	6	6-18	6-18
indirect	indirect	indirect	indirect	indirect	direct	direct	direct	direct
250	250	40	40	40	52	32	140	195
100	100	50	95	50	44	35	50	50
G1"	G1"	G½"	G¾"	G½"	G½"	G¾"	G¾"	G¾"
G¾"	G¾"	G¼"	G½"	G¼"	G¼"	G½"	G½"	G½"
955 x 400 x 740	955 x 400 x 740	680 x 250 x 595	955 x 400 x 740	680 x 250 x 595	680 x 250 x 595	480 x 250 x 546	955 x 400 x 740	955 x 400 x 740
●	●	●	●	●	–	–	●	●
–	–	–	–	–	●	●	–	–
●	●	●	●	●	●	●	●	●
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●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	●
●	●	–	–	–	●	●	–	–
●	●	●[2]	●	●[2]	–	●	–	–
●	●	O[3]	O	O[3]	●	●[2]	O[3]	O[3]
–	–	–	–	–	–	●	●	●
–	–	O	–	●	–	●	–	–
–	–	–	–	●	–	●[2]	–	–
●	●	●	●	●	–	–	●	●
●	●	●	●	●	–	●	●	●

POWERFUL TEMPERATURE CONTROLLERS IN MODULAR DESIGNS

i-Temp wi collection

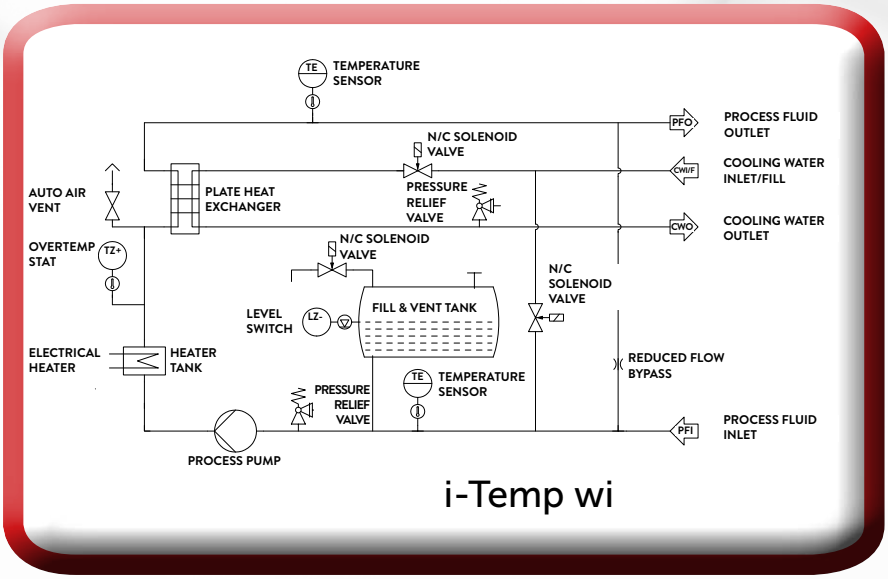
The i-Temp wi collection has been developed to offer a large performance range by means of modular design with various combinations of heating and cooling elements which cater for a wide variety of applications. Providing complete reliability, highly accurate control, ease of handling and a favourable cost/performance ratio, these versatile heaters offer any industrial process application a consistent yet flexible temperature control solution.

The i-Temp wi units are designed as water heaters with indirect cooling for usage with open tank up to 95°C and as a closed system up to 160°C.

Furthermore all units feature intelligent controllers as standard offering accurate temperature measurement, indication and monitoring.

Unit features include:

- Self optimising C8 advanced controller with high control accuracy
- Simultaneous display of set and actual values
- Measuring, indication and monitoring of the flow rate (optional)
- Integrated operating and service information
- Storage and recall of process parameters with memory card
- Solid State Relays – energy saving control
- Continuous monitoring of process parameters
- Optional connection for external probe (PT100 or Fe-CuNi)
- Optional interfaces at front panel (analogue 0-10v, 0/4-20mA; serial RS 232, RS 422, RS 485, TTY, Can Bus, Profibus, Profinet, Devicenet, and Euromap 66)
- Splash proof electrics



i-Temp wi

Temperature control units water indirect 95°C, 140°C, 150°C and 160°C

● = Standard / o = Option / – = not available/ Values in () optional

	Model i-Temp	i-Temp wi 100	i-Temp wi 150	i-Temp wi 250	i-Temp wi 400	i-Temp wi 500
Technical data	Fluid	water	water	water	water	water
	Temperature max. (°C)	140	140 (95. 150, 160)		140 (95, 150)	
	Pump capacity max. (l/min/bar)	7.0/4.7	200/5.1	230/5.5	420/3.6	500/4.2
	Heating capacity, selectable (kW)	9/18/27/36/45/54	9/18/27/36/45/ 54/63/72	9/18/27/36/45/ 54/63/72	9/18/27/36/45/ 54/63/72	9/18/27/36/45/ 54/63/72
	Cooling	indirect	indirect	indirect	indirect	indirect
	Cooling capacity (kW) [1]	100	200	270	460	600
	Process circuit supply and return connections [2]	G1"	G1¼"	G1½"	DN 50	DN 65
	Housing length L (mm) [3]	990 (1120/1465)	990 (1120/1465)	990 (1120/1465)	1465	1465
	Housing width W (mm) [3]	430 (510/570)	430 (510/570/695)	430 (510/570/695)	570 (695)	570 (695)
	Housing height H (mm) [3]	935 (1275)	935 (1035/1275)	935 (1035/1275)	1275	1275
	Weight min. depending on the specification (Kg)	80	120	150	200	200 - 500
Standard specification	Control of cooling with solenoid valve	●	●	●	●	●
	Automatic fill	●	●	●	●	●
	Automatic venting and pressure relief	●	●	●	●	●
	Electronic level control with dry-running protection	●	●	●	●	●
	Safety thermostat	●	●	●	●	●
	Adjustable point limits	●	●	●	●	●
	Ramp function for temperature alteration	●	●	●	●	●
	Cooling down to safety temperature when switching off	●	●	●	●	●
	Strainer in cooling water inlet	●	●	●	●	●
	Continuous heater control with switch cabinet fan	●	●	●	●	●
	Acoustic alarm	o	o	o	o	o
options	Digital flow rate indication and monitoring	o	o	o	o	o
	Separate fill line	o	o	o	o	o
	Pressurised air valve for mould draining	o	o	o	o	o
	Return temperature indication	o	o	o	o	o
	Connection for external Fe-CuNi or Pt 100	o	o	o	o	o
	Interface for central machine control	o	o	o	o	o
	Strainer in return line circulation medium	o	o	o	o	o
	Control of cooling with motor valve	o	o	o	o	o
	Additional expansion tank for large external volumes	o	o	o	o	o

1) at 15°C cooling water temperature and 130°C circulation medium temperature
2) depending on cooling water amount
3) depending on built in heating and cooling capacities as well as the size of the expansion tank

MODULAR TEMPERATURE CONTROLLERS WITH DIRECT COOLING

i-Temp wd collection

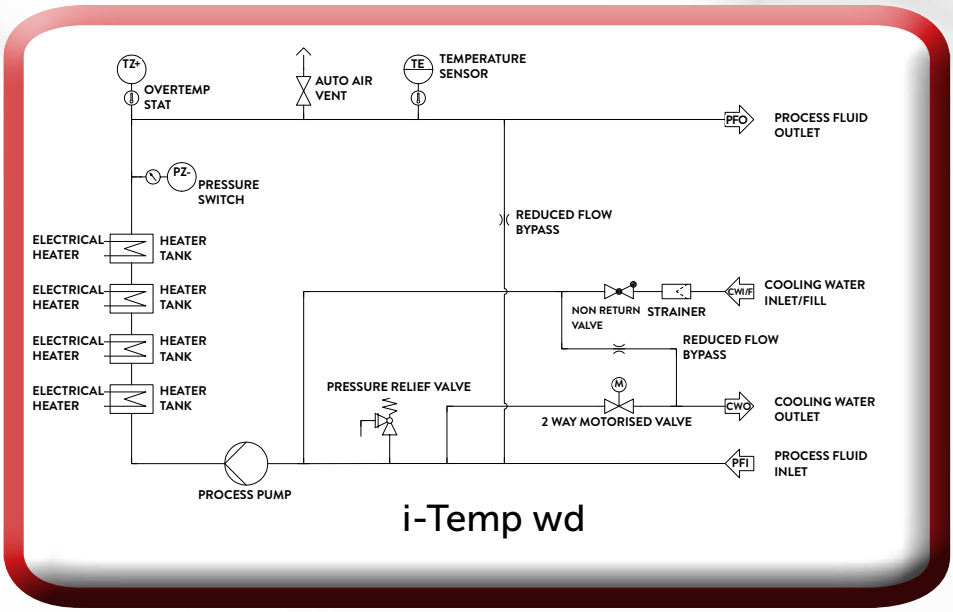
The i-Temp wd series offers both heating and cooling and is set-up and ready for connection to the process with direct cooling, specifically designed for operation with water as the circulation fluid. Direct cooling comes as an advantage when a high cooling capacity is required directly at low temperature differences between cooling water and the circulation medium. In this case the cooling water will be fed without temperature loss into the circulation circuit. Water circuits are designed as a closed system which allows pressurised heating of up to 150°C. Depending on the operating condition, the heat will either be removed from the application by cooling or transferred to the application by heating.

Heat transfer occurs by the circulation of water which is transferred through to the application by an efficient pump. A special sensor monitor is featured as standard within the i-Temp wd which measures the current temperature and the intelligent microprocessor controller compares the measured value with the adjusted set value which switches the heating and cooling accordingly. Furthermore a trouble–free operation is guaranteed thanks to a comprehensive safety system.

For applications which require something a little different, units can be tailor-made to fit specific site requirements.

Unit features include:

- Self optimising C8 advanced controller with high control accuracy
- Simultaneous display of set and actual values
- Measuring, indication and monitoring of the flow rate (optional)
- Integrated operating and service information
- Storage and recall of process parameters with memory card
- Solid State Relays – energy saving control
- Continuous monitoring of process parameters
- Optional connection for external probe (PT100 or Fe-CuNi)
- Optional interfaces at front panel (analogue 0-10v, 0/4-20mA; serial RS 232, RS 422, RS 485, TTY, Can Bus, Profibus, Profinet, Devicenet, and Euromap 66).
- Splash proof electrics



i-Temp wd

Direct water temperature controllers 140°C and 150°C

● = Standard / o = Option / – = not available/ Values in () optional

	Model i-Temp	i-Temp wd 60	i-Temp wd 100	i-Temp wd 150	i-Temp wd 250	i-Temp wd 400	i-Temp wd 500
Technical data	Fluid	water	water	water	water	water	water
	Temperature max. (°C)	140	140 (150)	140 (150)	140 (150)	140 (150)	140 (150)
	Type of operating pump	peripheral pump	multi stage stainless steel centrigual pump	two-stage stainless centrigual pump	two-stage stainless centrigual pump	centrigual pump	centrigual pump
	Pump capacity max. (l/min/bar)	45/6.0	90/6.0	200/5.1	230/5.5	420/3.6	500/4.2
	Heating capacity, selectable (kW)	6	9/18/27/36/45/54	9/18/27/36/ 45/54/63/72	9/18/27/36/ 45/54/63/72	9/18/27/36/ 45/54/63/72	9/18/27/36/ 45/54/63/72
	Cooling	direct	direct	direct	direct	direct	direct
	Cooling capacity max. (kW) [1]	47	100	200	270	460	600
	Process supply and return connections	G¾"	G1"	G1¼"	G1½"	DN 50	DN 65
	Cooling water supply and return connections [2]	G½"	G1½",¾"	G½",¾",1",1¼"	G½",¾",1",1¼"	G¾",1",1¼",1½",2"	G¾",1",1¼",1½",2"
	Housing length L (mm) [3]	210	990 (1120/1465)	990 (1120/1465)	990 (1120/1465)	1465	1465
	Housing width W (mm) [3]	450	430 (510/570)	430 (510/570/695)	430 (510/570/695)	570 (695)	570 (695)
	Housing height H (mm) [3]	520	735 (935/1275)	735 (935/1275)	735 (935/1275)	1275	1275
	Weight min. depending on the specification (kg)	35	120	150	160	200	250
Standard specification	Control of cooling with motor valve	●	●	●	●	●	●
	Control of cooling with solenoid valve	●	o	o	o	o	o
	Automatic fill	●	●	●	●	●	●
	Automatic venting	●	●	●	●	●	●
	Electronic level control with dry-running protection	●	●	●	●	●	●
	Safety thermostat	●	●	●	●	●	●
	Adjustable point limits	●	●	●	●	●	●
	Ramp function for temperature alteration	●	●	●	●	●	●
	Cooling down to safety temperature when switching off	●	●	●	●	●	●
	Strainer in cooling water inlet	●	●	●	●	●	●
	Continuous heater control	●	●	●	●	●	●
options	Acoustic alarm	o	o	o	o	o	o
	Digital flow rate indication and monitoring	o	o	o	o	o	o
	Pressurised air valve for mould draining	o	o	o	o	o	o
	Return temperature indication	o	o	o	o	o	o
	Interface for central machine control	o	o	o	o	o	o
	Connection for external Fe-CuNi or Pt 100	o	o	o	o	o	o
	Strainer in return line circulation medium	o	o	o	o	o	o

1) at 15°C cooling water temperature and 130°C circulation medium temperature
2) depending on cooling water amount
3) depending on built in heating and cooling capacities as well as the kind of cooling control

RELIABLE WATER TEMPERATURE CONTROLLERS FOR HIGH TEMPERATURES

i-Temp wh collection

The i-Temp wh water heaters have an advantage over oil heat transfer units especially if large amounts of heat needs to be extracted from small cooling surfaces. Particularly for injection moulding and some extrusion processes it is advantageous as it uses pressurised hot water instead of oil because the heat transfer capability is more effective, typically by a factor of three.

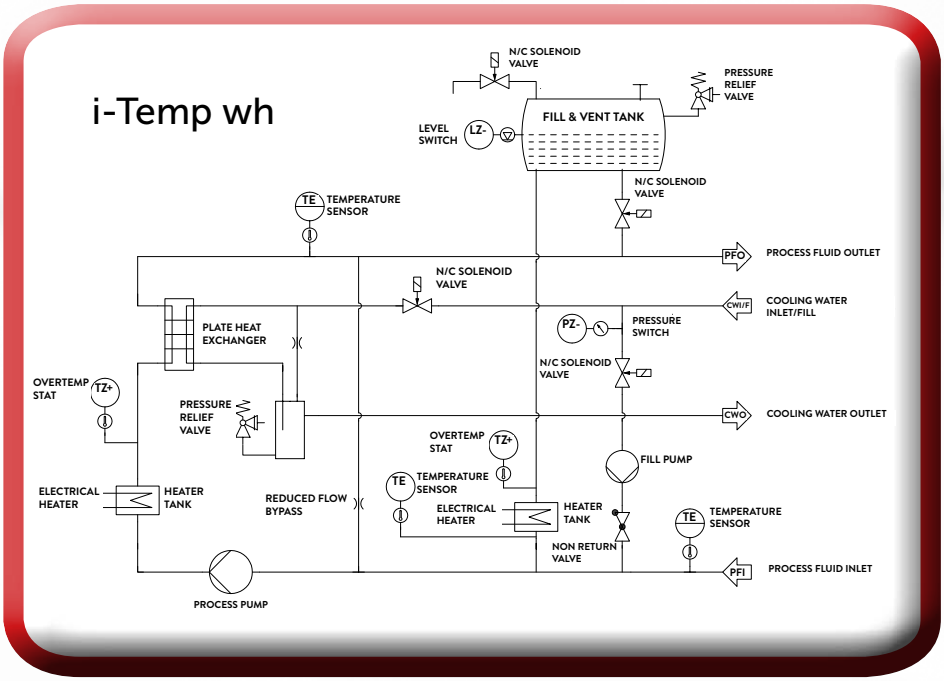
Pump flow rates and the surface area of tooling in contact with the product can also be reduced accordingly at the design stage if it is known that water is to be used, this leads to a more efficient system in terms of power and fluid cost.

The use of water as a fluid of heat transfer has a further advantage with the amount of liquid which is circulated by the pump and is reduced by a factor of two compared to three with the transfer of heat using oil.

The i-Temp wh range is specifically designed for special applications requiring temperatures in the range of **200°C**.

Unit features include:

- Magnetically coupled pumps
- Return flow temperature monitoring
- Built-in condensing unit to prevent steam hammer
- Level monitoring via a built-in high pressure makeup filling unit
- Ramp function for temperature changes, perfect for plastics processing
- The modular construction of the heating and cooling sections allows a unit to be designed for any type of application



Temperature controllers water up to 200°C

● = Standard / o = Option / – = not available/ Values in () optional

	Model i-Temp	i-Temp wh 60	i-Temp wh 100	i-Temp wh 150
Technical data	Fluid	water	water	water
	Temperature max. (°C)	200	200	200
	Pump capacity max. (l/min/bar)	60/5.0	80/5.0	120/5.0
	Heating capacity (kW)	9 (18/27)	18 (9/27/36)	27 (18/36/45/54)
	Cooling	indirect	indirect	indirect
	Cooling capacity max. (kW) [1]	32 (64)	40 (80)	48 (96)
	Process supply and return connections	DN 25	DN 32	DN 32
	Cooling water supply and return connections	G½"	G½"	G½"
	Housing length L (mm) [2]	1320	1320	1320 (1465)
	Housing width W (mm) [2]	500	570	570
	Housing height H (mm) [2]	1275	1275	1275 (1515)
	Weight min. depending on the specification (kg)	95	105	120
Standard specification	Sealess pump with magnetic coupling	●	●	●
	Temperature controlled pressure overlay	●	●	●
	Condensing unit to prevent steam impacts in cooling medium return	●	●	●
	Return temperature indication	●	●	●
	Return flow temperature monitoring and limiting	●	●	●
	Built-in high-pressure makeup feed unit	●	●	●
	Automatic venting and pressure relief	●	●	●
	Electronic level control with dry-running protection	●	●	●
	Safety thermostat	●	●	●
	Adjustable point limits	●	●	●
	Ramp function for temperature alteration	●	●	●
	Cooling down to safety temperature when switching off	●	●	●
	Strainer in return line circulation medium	●	●	●
	Continuous heater control with switch cabinet fan	●	●	●
options	Acoustic alarm	o	o	o
	Connection for external probe (Fe-CuNi or Pt 100)	o	o	o
	Interface for central machine control	o	o	o
	Separate fill line	o	o	o
	Strainer in return line process fluid	o	o	o
	Control of cooling with motor valve	o	o	o
	Additional expansion tank for large external volumes	o	o	o

1) at 15°C cooling water temperature and 150°C circulation medium temperature
2) depending on built in heating and cooling capacities as well as the size of the expansion tank

HEATER TRANSFER OIL - TEMPERATURE CONTROLLERS FOR HIGHEST DEMANDS

i-Temp to/tt/th

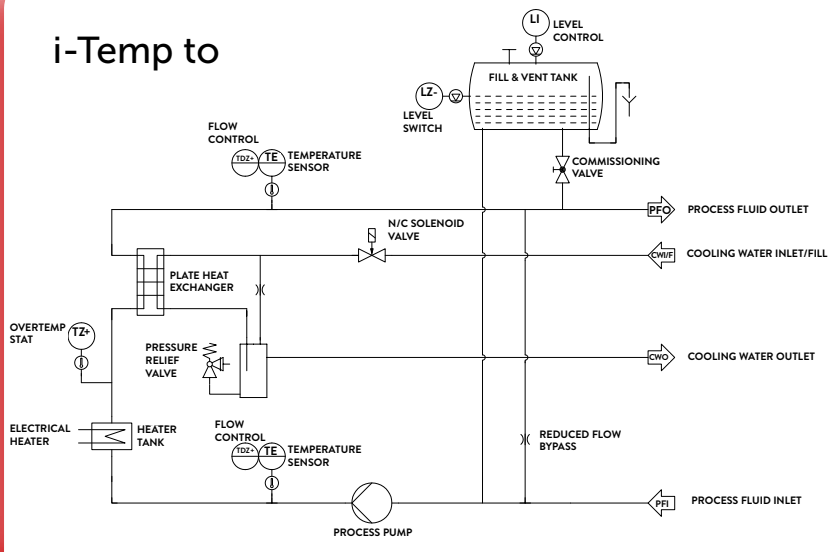
This collection of units featuring oil heat transfer are used for circulating temperatures of up to 350°C. Thermal oil has a low oxidation stability when it comes into direct contact with ambient air which is found in other manufacturer's heater units which feature submersible pump and tank.

This absorption of air can cause the oil's viscosity to increase and the pump flow rate to decrease. This can cause premature oil degradation and carbon deposits due to the decreased flow rate and increased oil film temperature on the heating elements. The result of this is reduced performance and early machine failure and increased maintenance costs.

Designed specifically for applications requiring high temperatures, the to/tt and th series uses low watts/cm² heating elements resulting in low film temperatures at normal flow rates, flow monitoring is built into the system which sets off an alarm if the flow rate becomes too low.

The i-Temp **tt/th** units feature a layer of cold oil within the expansion vessel which can also be equipped with a nitrogen supply device upon request.

i-Temp to



Temperature controllers thermal oil

	Model i-Temp
Technical data	Fluid
	Temperature max. (°C)
	Pump capacity max. (l/min/bar)
	Heating capacity max (kW)
	Cooling
	Cooling capacity max. (kW) [1]
	Mould circuit supply and return connections
	Cooling water supply and return connections [2]
	Housing length L (mm) [3]
	Housing width W (mm) [3]
	Housing height H (mm) [3]
	Weight min., depending on the specification (kg)
Standard specification	Control of cooling with solenoid valve
	Sealless pump with mag drive
	Oil seal in expansion tank
	Difference temperature control with switch-off function
	Electronic level control with dry running protection
	Safety thermostat
	Adjustable points limits
	Ramp function for temperature alteration
	Cooling down to safe temperature when switching off
	Strainer in return line process fluid
	Galvanised steel, painted in RAL 3020/7035
	Continuous heater control with switch cabinet fan
	Return temperature indication
	Flow control with switch-off function
options	Filter group in suction pipe
	Bellows type valve in UV, UR
	Acoustic alarm
	Connection for external (Fe-CuNi or Pt 100)
	Interface for central machine control
	Strainer in return line process fluid
	Cooling Bypass with 3-way motor valve
	Connection for nitrogen blanket at expansion tank

1) at 15°C cooling water temperature and 200°C circulation medium temperature

180°C, 300°C and 350°C

● = Standard / o = Option / – = not available/ Values in () optional

i-Temp to 50	i-Temp tt 50	i-Temp tt 60	i-Temp tt 100	i-Temp tt 140	i-Temp th 60	i-Temp th 100	i-Temp th 140
thermal oil	thermal oil	thermal oil	thermal oil	thermal oil	thermal oil	thermal oil	thermal oil
180	300	300	300	300	350	350	350
90/6.2	60/6.0	60/6.0	100/8.0	150/7.0 (200/5.6)	60/6.0	100/8.0	150/7.0
8	4/6/8	9/13.5/18	9/12/18/27/36	12/18/27/36/45/54	3/6	6/9/12	9/18/27
water indirect	water indirect	water indirect	water indirect	water indirect	water indirect	water indirect	water indirect
40	15/30	82/110/200	82/110/200/ 250/275	82/110/200/ 250/275/450	82/110	82/110/200	82/110/200
G¾"	G¾"	DN 25	DN 25	DN 32	DN 25	DN 25	DN 32
G½"	G½"	G½",¾"	G½",¾",1"	G½",¾",1",1¼	G½"	G½",¾"	G½",¾"
1036	850	1320	1320	1320	1320	1320	1320
295	295	500	570	570	500	570	570
725	725	1275	1275	1275	1275	1275	1275
75	75	210	310	410	210	310	410
●	●	●	●	●	●	●	●
–	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●
–	–	o	o	o	o	o	o
–	–	o	o	o	o	o	o
o	o	o	o	o	o	o	o
o	o	o	o	o	o	o	o
o	o	o	o	o	o	o	o
o	o	o	o	o	o	o	o
o	o	o	o	o	o	o	o
o	o	o	o	o	o	o	o
–	–	o	o	o	o	o	o
–	–	o	o	o	o	o	o

2) depending on cooling water amount

3) depending on built in heating and cooling capacities

DESIGNED TO MEET YOUR NEEDS

ICS Cool Energy has carried out numerous projects for a variety of applications around the world. Dealing with customer specific systems our engineering team have the ability to adapt units to tailor temperature control any site application need with a keen price/performance ratio.

Working closely with a wide variety of industries, ICS Cool Energy have extensive knowledge and experience in industrial process applications including plastics moulding, rubber extrusion, food processing, chemical and pharmaceutical practices.

Plastics Processing

The i-Temp range is perfect for plastics moulding processes as units offer accurate temperature management ensuring continuous productivity. With temperatures available up to 350°C, moulding processes are kept consistent and reliable to produce a high quality end product.

Chemical and Pharmaceutical

ICS Cool Energy understand precision is key within laboratories and clean rooms which is why the i-Temp range have the ability to extent capabilities to cater for unique sit requirements. Understanding the regulated and controlled levels within the pharmaceutical industry has aided ICS Cool Energy to develop the high level of expertise for their customers which is apparent from each project undertaken.

Rubber Extrusion

Many rubber extrusion processes require separate temperature controlled zones in order manage various parts of the production process. The i-Temp range can be tailored to cater for this need with bespoke built products offering zoned heating. Furthermore, with connectivity to a site's building management system, process can accurately be managed.

Food Processing

Having worked closely with food and beverage manufacturers, ICS Cool Energy have developed food safe equipment with specialist capabilities including jacketed vessels, stainless steel units (IP65 rated) and specialist diagnostics. The ICS Cool Energy advanced controllers offer special recipe control for the user to analyse process productivity in real time to ensure food safety standards and high quality food products.

OEM Manufacturing

ICS Cool Energy is a preferred partner of many machine manufacturers and processors providing solutions for temperature control and compact integrated systems. These are ideal for integration into the OEM's machinery and equipment is configured to meet the customer's application requirements. Temperature control technology is integrated as system component into machinery for plastics, food and pharmaceutical processing in plant engineering applications.

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i-Temp Brochure V2 Feb 015